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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,770	07/14/2003	Takashi Hamada	740756-2628	4042
22204	7590	11/29/2006	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			LIN, JAMES	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/617,770	Applicant(s) HAMADA, TAKASHI	
	Examiner Jimmy Lin	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (6,114,183) in view of Shoji et al. (JP-10158638).

Hamada discloses method of manufacturing an EL device, comprising:

depositing a TFT 33 over a substrate (Fig. 8);

forming an electrode 13 which is electrically connected with the TFT (column 6, lines 62-64);

forming a light emitter 14 containing an organic compound over the first electrode (column 3, lines 42-43);

forming a second electrode 16 over the light emitter (column 3, lines 46-47).

Hamada does not explicitly teach that the second electrode is formed using an electron beam evaporation method, wherein an acceleration voltage of electrons is controlled such that radial rays are not substantially radiated from an evaporation material for forming the second electrode when the evaporation material is irradiated with an electron beam. However, the selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325

U.S. 327, 65 USPQ 297 (1945). Shoji teaches a method of producing an EL device, wherein the second electrode is formed over the organic EL layer using an electron beam vapor deposition method. The acceleration voltage of an electron is controlled such that, when an accelerated electron is irradiated on a vapor-depositing material, a radial ray is not substantially radiated from the vapor-depositing material [0013]. The acceleration voltage is controlled to prevent the reduction of fluorescence in the organic EL layer [0024]. Although Shoji does not explicitly teach that acceleration voltage is controlled such that the thin film transistor (TFT) is not deteriorated with radial rays, the lack of radial rays in the process will prevent any deterioration of the TFT. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the second electrode of Hamada via an electron beam vapor deposition method with a reasonable expectation of success because Shoji teaches that electron beam vapor deposition is a suitable method for depositing the second electrode and that the operating conditions in this method does not radiate radial rays that can deteriorate the fluorescent properties of the EL layers.

Because a radial ray is not substantially radiated from the vapor-depositing material by controlling the acceleration voltage of electrons, the TFT is not deteriorated with radial rays and the sub-threshold coefficient does not increase.

Claims 5,6: Shoji teaches that the second electrode can have a thickness in the range of approximately 10 nm to 1 μ m [0019].

Shoji does not explicitly teach that control is performed such that a time during which the TFT is exposed to radial rays is shortened to avoid deterioration of the TFT when the evaporation material is irradiated with an electron beam. However, Shoji teaches that the acceleration voltage directly affects the film-forming speed [0026], which inversely affects deposition time. In other words, as the acceleration voltage increases, the deposition rate increases while the deposition time decreases. Because the acceleration voltage is controlled, the film-forming speed and deposition time is indirectly controlled. A particular parameter can be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, and the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have

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increased the acceleration voltage through routine experimentation in order to find the optimal balance between the deposition rate and the release of radial rays. The TFT exposure to radial rays would necessarily be shortened due to the shortening of the time required for deposition.

Claims 7-12: Shoji teaches that the vapor-depositing material comprises of a metal component and an alkali earth metal [0017].

Claims 13-16: A radial ray is not substantially radiated from the vapor-depositing material [0013].

Response to Arguments

4. Applicant's arguments filed 10/3/2006 have been fully considered but they are not persuasive.

Claims 1-12 as rejected over Hamada '183 and Shoji '638:

The Applicant argues that Shoji's disclosure does not recognize the problem of the thin film transistor having a shift of a sub-threshold voltage after having been radiated with radial rays. The Applicant further argues that without recognizing the problem, there can be no suggestion or motivation for improving the characteristic abnormality of the thin film transistors in Shoji and Hamada. However, radial rays from the electron beam evaporation method of an evaporation material appears to cause the shift in the sub-threshold voltage. Because Shoji teaches that a radial ray is not substantially radiated from the evaporation material, radial rays are not present to cause such a shift. Although Shoji does not recognize the problem of the TFT having a shift, such a shift is necessarily prevented due to the lack of radial rays, wherein the lack of radial rays is controlled by controlling the acceleration voltage of electrons.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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increased the acceleration voltage through routine experimentation in order to find the optimal balance between the deposition rate and the release of radial rays. The TFT exposure to radial rays would necessarily be shortened due to the shortening of the time required for deposition.

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Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JL
JL


KEITH HENDRICKS
PRIMARY EXAMINER